

EFFECTIVENESS BULLETIN

Homoeopathy

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The research evidence on the effectiveness of homoeopathy presented in a recent issue of *Effective Health Care* is reviewed.

Homoeopathy is a system of treating patients using very low dose preparations according to the principle: "like should be cured with like". This paper summarises the research evidence presented in a recent issue of *Effective Health Care* on the effectiveness of homoeopathy.¹

Increasing numbers of patients are seeking information on complementary medicines from NHS health professionals.² Results of a 1998 survey of use and expenditure on complementary medicine in England suggested that 28% of respondents had either visited a complementary therapist or had purchased an over the counter herbal or homoeopathic remedy in the past year.³ From this survey it was estimated that there could be over 470 000 recent users of homoeopathic remedies in England.³

Homoeopathy has been part of the NHS since its inception.⁴ There are currently five homoeopathic hospitals, of which the two largest in Glasgow and London have inpatient units. These hospitals provide a range of conventional and complementary treatments in addition to homoeopathy.

Most of the conditions treated by homoeopathic practitioners are chronic or recurrent. They also treat a large number of patients with ill defined illnesses that have not been given a conventional diagnosis.⁵ Initially, a very detailed history is taken from the patient, a clinical examination is performed, and all signs and symptoms are recorded. Attention is paid to alternating or unusual symptoms and information is sought on the impact of modalities (conditions providing relief or aggravation of symptoms such as weather or activity). The symptoms are then matched to remedies using either a homoeopathic repertory or "pattern recognition".

Homoeopathic remedies are often known as potencies and are prepared by a process of serial dilution with succussion (vigorous shaking).^{5,6} Such dilutions are known as ultramolecular in that they are diluted to such a degree that not even a single molecule of the starting substance is likely to be present. The claim that these dilutions have an active mechanism is the source of most of the scientific controversy surrounding homoeopathy.

Methods of prescribing vary among homoeopathic practitioners (see box 1).^{5,7} Following administration of a remedy, the homoeopathic practitioner follows the patient's progress and pays attention to the development of symptoms, and will repeat or adjust the prescription depending on what is observed.⁶

NATURE OF THE EVIDENCE

Around 200 randomised controlled trials (RCTs) evaluating homoeopathy have been conducted, and there are also several systematic reviews of these trials. This paper is based mainly on an overview of existing systematic reviews of RCTs. Some reviews are general overviews, some focus on individualised (classical) homoeopathy, while the remainder have a more specific focus. Individual RCTs published subsequent to the included reviews of individualised homoeopathy and those with a specific scope are also included (more detail on the included RCTs is available at www.york.ac.uk/inst/crd/ehcb.htm). Details of the review methods are available elsewhere.¹

There are a number of problems and controversies surrounding the existing evidence base for homoeopathy. Firstly, there is much debate over whether homoeopathy shows any effect over and above placebo (a dummy medication or treatment given to participants in trials). Sceptics have argued that homoeopathy cannot work because of the use of remedies that are diluted to such a degree that not even a single molecule of the starting substance is likely to remain. Given the absence of a plausible mechanism of action, it has been argued that the existing evidence base represents little more than a series of placebo versus placebo RCTs.^{8,9}

Others have argued that much of the research conducted on the effectiveness of homoeopathy is not representative of routine homoeopathic practice as homoeopathic treatment is highly individualised—that is, two patients with similar symptoms may receive different treatments.¹⁰ While it is possible to carry out RCTs evaluating the efficacy of homoeopathy, researchers have tended to focus on conducting placebo controlled RCTs either to test the effects of a single remedy on a particular condition and/or to explore the placebo issue. As such, conditions such as delayed onset muscle soreness (DOMS) have been subject to study whereas skin conditions such as eczema, which are commonly treated by homoeopathy, have been overlooked.¹⁰

Box 1 Methods of homoeopathic prescribing^{5,7}

- Classical: single remedy prescribed based on patient's presentation and history
- Complex: more than one remedy used concurrently
- Fixed: same single agent used for a group of patients
- Isopathy: preparation based on causal agent
- Phytotherapy: administration of herbs or low potencies of herbs

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Table 1 Systematic reviews of homoeopathy with a general scope and of individualised (classical) homoeopathy

Author	Results	Authors' conclusions and reviewer's notes	Quality assessment*
<i>Reviews with a general scope</i>			
Hill ¹²	40 RCTs included (1966–89). Half of the trials concluded that homoeopathy was effective, 7 concluded that results were promising but that the studies were underpowered. Of the 3 largest trials, one concluded that homoeopathy was effective while the other 2 found no statistically significant difference between homoeopathy and control.	Authors' conclusions: the therapeutic value of homoeopathy cannot be considered to have been demonstrated. Reviewer's notes: the earliest general review of homoeopathy. Few details were provided relating to the search strategy used, and it is possible that this may have been more rigorous than is apparent from the paper.	1=fair/poor 2=fair 3=fair 4=fair 5=fair
Kleijnen ^{7 40}	107 trials met inclusion criteria; 68 were RCTs (1943–90). Of 105 trials with interpretable results, 81 had positive results in favour of homoeopathy and in 24 no positive effects of homoeopathy were found. Positive results were more likely to be found in trials with lower methodological quality.	Authors' conclusions: evidence of clinical trials is positive but not sufficient to draw definitive conclusions because of low methodological quality and the unknown role of publication bias. Reviewer's notes: Most of the trials from an earlier review ¹² are also included in this review.	1=fair 2=good 3=good 4=fair 5=fair
Linde ¹³	119 RCTs met the inclusion criteria (1966–95. Of these, 30 had inadequate information to allow statistical pooling, leaving 89 RCTs that met all inclusion criteria. The overall OR (all trials) was 2.45 (95% CI 2.05 to 2.93) in favour of homoeopathy. Further analyses showed that trials with better methodological quality were less likely to show positive results in favour of homoeopathy. ⁴¹	Authors' conclusions: results of meta-analysis not compatible with the hypothesis that the clinical effects of homoeopathy are completely due to placebo. Insufficient evidence was found that homoeopathy is clearly efficacious for any single clinical condition. Reviewer's notes: clinically heterogeneous data were combined and the results of the test of heterogeneity were not reported, even though this was carried out. The estimates shown should therefore be interpreted with caution.	1=fair 2=good 3=good 4=fair 5=poor
Cucherat ¹⁴	17 comparisons in 16 RCTs met the inclusion criteria (1967–98). 11 of the 17 comparisons (65%) showed statistically significant results in favour of homoeopathy. Overall pooled p value (17 comparisons) was 0.000036. Sensitivity analyses: double blind RCTs only (n=16), p=0.000068. Double blind RCTs of highest methodological quality (n=5), p=0.082. Analysis of the likelihood of publication bias indicated that it was unlikely.	Authors' conclusions: there is some evidence that homeopathic treatments are more effective than placebo; however, the strength of this evidence is low because of the low methodological quality of the trials. Studies of high methodological quality were more likely to be negative than the lower quality studies. Reviewer's notes: the pooled p values are based on clinically heterogeneous data. This method should be used and interpreted with caution since it may mask some fundamental differences between studies.	1=fair 2=fair 3=fair 4=fair 5=poor
<i>Reviews of individualised (classical) homoeopathy</i>			
Linde ¹⁵	32 randomised, quasi-randomised, or double blind design trials met inclusion criteria (1966–98). The methodological quality of trials was variable. 19 placebo controlled trials presented the results in sufficient detail to be included in the meta-analysis. Overall rate ratio (n=19) 1.62 (95% CI 1.17 to 2.23) in favour of homoeopathy. Sensitivity analysis: methodologically best trials (n=6): rate ratio 1.12 (95% CI 0.87 to 1.44).	Authors' conclusions: results suggest that individualised homoeopathy has an effect over placebo. However, the evidence is not convincing because of methodological shortcomings of, and inconsistencies between, the trials. Reviewer's notes: the authors have pooled clinically heterogeneous data both for the overall pooling, and for the sensitivity analysis according to methodological quality. Statistical assessments of heterogeneity are not reported. The results should therefore be viewed with caution. There is some overlap between this review and the previous more general paper. ¹³ There is a slight discrepancy between the abstract/main text and tables for the overall rate ratio figures.	1=fair 2=good 3=good 4=fair 5=poor
Ernst ¹⁶	2 double blind RCTs, 1 unblinded RCT, 3 non-randomised trials met the inclusion criteria (1978–98). 2 trials suggested that homeopathic remedies may be superior to conventional drug therapy; 2 other trials suggested that conventional drug therapy may be superior to homoeopathy. Results of the last two trials suggested no between group differences.	Authors' conclusions: all of the included trials had serious methodological flaws. The value of individualised homoeopathy relative to allopathic treatments is therefore unknown. Reviewer's notes: this is the only identified review to address the comparison between homoeopathy and conventional treatments. Assessments of tests of statistical significance for between group comparisons within trials were not presented.	1=fair 2=fair 3=fair/poor 4=fair/poor 5=fair
*Assessment of methodological quality: 1=selection criteria, 2=search strategy, 3=validity assessment of primary studies, 4=presentation of details of primary studies, 5=data synthesis. RCT=randomised controlled trial.			

Most RCTs of homoeopathy have involved small numbers of patients and have suffered from low statistical power. Given the controversy surrounding the plausible mechanism of action for homoeopathy, there have been calls for stronger levels of evidence for its effectiveness than would normally be required for more conventional interventions.^{7 11}

REVIEWS WITH A GENERAL SCOPE

Four systematic reviews were identified (table 1).^{7 12–14} The purpose of these reviews was to determine whether there is any evidence for the effectiveness of homoeopathic treatment generally. Patients with any disease were included rather than investigating effects within a specific group such as those with

asthma. Because of the general nature of all four reviews, characteristics of the participants and outcomes were not specified in the selection criteria for primary studies and both participants and interventions varied greatly. All four reviews included RCTs and one also included non-randomised studies.⁶ Each review covered several different types of homoeopathy including classical, fixed, complex, and isopathy. All reviews identified methodological problems within the primary studies and, as such, were unable to draw firm conclusions about the general effectiveness of homoeopathy. It should be noted that the analyses undertaken in two of the reviews involved the statistical pooling of clinically heterogeneous data and therefore the estimates shown should be viewed with caution (table 1).^{13 14}

REVIEWS OF INDIVIDUALISED (CLASSICAL) HOMOEOPATHY

Two reviews were identified (table 1).^{15 16} Again, the scope of these reviews was general and selection criteria relating to participant characteristics and outcome measurements were unspecified. Methodological problems with the primary studies were reported in both reviews.^{15 16}

One review assessed the effectiveness of individualised homoeopathy compared with placebo, no treatment, or another therapy, and included randomised, quasi-randomised, or double blind trials (n=32).¹⁵ The results from a pooled analysis of 19 trials indicated a statistically significant result in favour of homoeopathy. However, when the analysis was limited to six trials of higher methodological quality, the difference between homoeopathy and control treatments was no longer statistically significant (table 1). It should be noted that clinically heterogeneous data were combined in the analyses, and assessments of statistical heterogeneity were not reported. The results should therefore be interpreted with caution.

The second review assessed the effectiveness of individualised homoeopathy compared with allopathic (conventional) medications and included RCTs and non-randomised controlled trials.¹⁶ Six studies were included, each involving a different disease. The results suggested that homoeopathic remedies may be superior to conventional drug therapy for rheumatoid arthritis and otitis media in children. However, conventional drug therapy may be better than homoeopathy for proctocolitis (inflammation of the rectum and colon) and tonsillitis in children. No between group differences were found for trials of irritable bowel syndrome and malaria. This review did not present details of individual studies, including aspects of methodological quality, and therefore it was difficult to judge the validity of the findings of the review.

Four further RCTs of classical homoeopathy, all of reasonable methodological quality, were identified,^{17–20} two of which were included in one of the above reviews¹⁵ but had been reported only in abstract form.^{17 18} In addition, a follow up study relating to a trial of classical homoeopathy included in a review on homoeopathic prophylaxis of headaches and migraine was identified²¹ and will be described later.²²

In the earliest trial patients with mild traumatic brain injury were recruited.¹⁷ After 4 months, statistically significant effects in favour of homoeopathy were observed for changes in some scores of physical, cognitive, and affective symptoms and functional disability.

A small trial (n=23) compared homoeopathy with placebo in relieving symptoms associated with the premenstrual syndrome (PMS).¹⁸ The results were in favour of homoeopathy for improvement in menstrual symptoms at 3 months (p=0.057), mean symptom improvement rate (p=0.048), and the proportion of women experiencing more than 30% improvement (38% versus 90%, p=0.037).

Another trial assessed the effects of classical homoeopathy in treating children with a recent history of diarrhoea.¹⁹ The results suggested that homoeopathy was significantly more effective than placebo in reducing the frequency of diarrhoea and the duration of illness. The same research group conducted another trial (n=75) on children with acute otitis media.²⁰ No statistically significant between group differences were seen for treatment failure or middle ear effusion.

REVIEWS WITH A MORE SPECIFIC FOCUS

Since all of the reviews described so far have aimed to assess whether homoeopathy as a general system shows any effect over and above placebo, no specific implications can be derived for clinical practice. The following sections provide details of nine reviews with a more specific focus in terms of the homoeopathic agent being evaluated or the type of participants recruited (table 2).^{21 23–30}

Arnica

One review focused on the effectiveness of homoeopathic arnica.²⁴ The findings did not indicate that homoeopathic arnica is any more effective than placebo. Some study details were lacking, particularly with regard to results and methodological quality, and therefore it is difficult to assess the reliability of the evidence.

Eight placebo controlled trials (including four RCTs) were included. The conditions represented included: DOMS, post-operative care, trauma, stroke, and experimental bruising (bruising deliberately induced in healthy volunteers under laboratory conditions). Two trials showed a statistically significant result in favour of arnica when used to treat DOMS and to prevent postoperative complications. However, the remaining six trials did not show statistically significant between group differences.²⁴

A further five RCTs of the use of homoeopathic arnica were identified.^{31–35} Three were concerned with DOMS^{31–33} and two with surgical patients.^{34 35} In the trials of DOMS, two of the three studies did not show statistically significant between group differences.^{31 32} The surgical trials focused on recovery after total abdominal hysterectomy³⁴ and saphenous stripping (stripping of varicose veins).³⁵ Neither trial found statistically significant differences between groups.

Postoperative ileus (bowel muscle paralysis)

Postoperative ileus refers to cessation of peristalsis due to paralysis of the bowel muscle following surgery or trauma to the bowel. One review assessed the effectiveness of homoeopathic treatment versus placebo in resolving postoperative ileus and included six trials (four RCTs) of patients undergoing abdominal or gynaecological surgery.²³ All trials used fixed homoeopathic preparations (as opposed to individualised prescription). The findings indicated that homoeopathic treatment administered immediately after abdominal surgery may reduce the time to first flatus compared with placebo. However, the possibility of bias and inappropriate pooling of data means that these findings should be treated with caution. In addition, the largest and most well conducted study, as rated by the authors of the review, showed no difference between homoeopathy and placebo. No further RCTs were identified.

Delayed onset muscle soreness (DOMS)

The effectiveness of homoeopathy in reducing DOMS was assessed in a review of eight trials, including three RCTs.²⁷ The results suggested that homoeopathic remedies were no more effective than placebo in alleviating DOMS.

Participants were healthy volunteers who had undergone some form of exercise in order to induce DOMS. There was a high level of heterogeneity between included studies in terms of the homoeopathic remedies and the type of exercise used to induce DOMS. The three RCTs all reported non-significant differences between treatment groups, while results from the non-randomised studies were inconsistent.²⁷

A further three RCTs of the homoeopathic management of DOMS were identified and have been discussed in the section on homoeopathic arnica.^{31–33}

Arthritis and other musculoskeletal disorders

Two reviews were identified.^{28 29} One examined the effectiveness of homoeopathy in people with rheumatoid arthritis, osteoarthritis, and other types of musculoskeletal disorders.²⁸ Most of the trials were rated by the authors of the review as being of high methodological quality. Although the overall pooled estimate indicated that homoeopathy was superior to placebo, the data were clinically heterogeneous. In addition, the outcome measurements used in the pooling were not defined but, when referring to a related publication, it seems likely that these were highly heterogeneous.¹³ The findings of this review should therefore be treated with a great deal of caution.

Table 2 Systematic reviews of homoeopathy with a more specific focus

Author	Results	Authors' conclusions and reviewer's notes	Quality assessment*
Ernst ²⁴ (Arnica)	8 controlled clinical trials met inclusion criteria (n=338) (1966–97). Potencies of arnica differed across the trials. Two trials showed a statistically significant result in favour of arnica (1 delayed onset muscle soreness and 1 prevention of postoperative complications). The remaining six trials did not demonstrate statistically significant between group differences. Most of the trials had methodological problems and the higher quality studies tended to have negative findings.	Authors' conclusions: the claim that homoeopathic arnica is efficacious beyond a placebo effect is not supported by rigorous clinical trials. Reviewer's notes: more information on individual study details would have been welcome, particularly relating to results in terms of actual numbers and p values. Two of the included studies were of experimentally induced trauma; possible problems of generalisation to usual clinical practice. There is some overlap with two of the more general reviews. ^{7 13}	1=fair 2=fair 3=good 4=fair 5=fair
Barnes ²³ (postoperative ileus)	6 controlled clinical trials met inclusion criteria (n=1076) (?–1996). The pooled weighted mean difference (n=6) showed a reduction in the delay in restoration of intestinal peristalsis, as measured by time to first flatus, with homoeopathic treatment compared with placebo (–7.4 hours, 95% CI –4.0 to –10.8 hours, p<0.05). Sensitivity analysis of higher quality trials (n=4): WMD –6.11 hours [95% CI –2.31 to –9.91 hours, p<0.05]. The largest and most rigorous study showed no statistically significant differences between groups.	Authors' conclusions: homoeopathic treatment administered immediately after abdominal surgery may reduce the time to first flatus compared with placebo. Analyses do not provide evidence for the use of a particular homoeopathic remedy or for a combination of remedies for postoperative ileus. Several drawbacks inherent in primary studies and in the methodology of meta-analysis preclude a firm conclusion. Reviewer's notes: overlap with some of the more general reviews. ^{7 13 14} More details on participants (age and surgery type) would have been useful. Test for heterogeneity not reported.	1=fair 2=fair 3=good 4=fair 5=fair
Ernst ²⁷ (delayed onset muscle soreness; DOMS)	8 trials met inclusion criteria (3 randomised) (n=311) (1966–97). There was a high level of heterogeneity between included studies with regard to the type of homoeopathic remedy used and the type of exercise used to induce DOMS. 3 RCTs all reported non-significant differences between groups for all outcome measures. Results from the non-randomised studies were inconsistent. The three RCTs were rated as being of higher methodological quality than the other studies.	Authors' conclusions: the published evidence does not support the hypothesis that homoeopathic remedies are more effective than placebo in alleviating the symptoms of DOMS. Reviewer's notes: there is some overlap with the more general reviews. ^{7 13} Since few details of the primary studies are presented, it is difficult to determine whether the authors' conclusions follow from the evidence.	1=fair 2=fair 3=fair 4=poor 5=fair
Jonas ²⁸ (rheumatic disease)	Six RCTs met inclusion criteria (n=392) (1966–95). Three RCTs on RA were included (n=226) and one each on OA (n=36), fibromyalgia (n=30), and myalgia (n=60). The pooled OR (6 RCTs) was 2.19 (95% CI 1.55 to 3.11). Pooled OR for five high quality trials was 2.11 (95% CI 1.32 to 3.35).	Authors' conclusions: all studies were statistically but not clinically homogenous with regard to patient selection, treatment strategies, and outcomes. Reviewer's notes: this review is a subset of a larger review. ¹³ Some of this summary and assessment has been based on information provided in the larger review. This paper provided few details of the individual trials, and the outcome measurements used were not mentioned. Since clinically heterogeneous data have been pooled, the results should be interpreted with great caution.	1=fair 2=good 3=good 4=fair 5=poor
Long ²⁹ (OA)	Four RCTs met inclusion criteria (n=406) (up to 2000). All RCTs were judged as being of high methodological quality, but none were free of flaws. All recruited people with knee OA and assessed improvement in pain (duration range 2–5 weeks). One RCT found a statistically significant difference in favour of a homoeopathic gel compared with an NSAID gel. Another RCT, which also recruited people with hip OA, showed a statistically significant difference in favour of fenoprofen when compared with homoeopathy or placebo, with no difference observed between homoeopathy and placebo. The other two trials did not show any statistically significant differences between homoeopathy and control.	Authors' conclusions: the small number of RCTs conducted to date preclude firm conclusions as to the effectiveness of combination homoeopathic remedies for OA. The standardised treatments used in the trials are unlikely to represent common homoeopathic practice where treatment tends to be individualised. Reviewer's notes: the results of the review also preclude firm conclusions, as findings were inconsistent across trials.	1=fair 2=good 3=fair 4=fair 5=fair
Ernst ²¹ (headaches and migraine)	4 double blind RCTs met inclusion criteria (n=284) (1966–98). 1 RCT was of poor methodological quality, 2 were intermediate, and 1 good. One RCT found statistically significant improvement in all outcomes in favour of homoeopathy. A second found no significant between-group differences in terms of frequency, intensity, or duration of attacks, nor analgesic consumption, although the neurologist's assessment of attack frequency suggested a statistically significant difference in favour of homoeopathy. Two trials did not find any statistically significant differences between groups.	Authors' conclusions: these data do not suggest that homoeopathy is effective in the prophylaxis of migraine or headache beyond a placebo effect. Reviewer's notes: overlap with two of the more general reviews. ^{13 15} The authors' conclusions follow on from the results but should be viewed with caution because of the small number of studies available and limited methodological quality of three out of the four studies.	1=fair 2=fair 3=fair 4=fair 5=fair
Linde ²⁶ (asthma)	3 placebo controlled, double blind RCTs met inclusion criteria (n=154) (1966?–97). RCTs used different homoeopathic treatments which precluded quantitative pooling of results. Treatments in the RCTs were unrepresentative of common homoeopathic practice. In one trial severity of symptoms significantly lessened in the homoeopathy group compared with placebo. In another, lung function measures and medication use showed improvement in the homoeopathy group compared with placebo (this trial was of lowest methodological quality). The third trial found improvement in both groups, but no statistically significant difference between groups.	Authors' conclusions: there is not enough evidence to reliably assess the possible role of homoeopathy in asthma. As well as RCTs, there is a need for observational data to document the different methods of homoeopathic prescribing and how patients respond. Reviewer's notes: Cochrane review. Dates for search strategy unclear. There is some overlap with one of the general reviews. ¹³	1=good 2=fair 3=good 4=fair 5=fair

Table 2 continued

Author	Results	Authors' conclusions and reviewer's notes	Quality assessment*
Vickers ²⁵ (influenza)	7 RCTs met inclusion criteria; three prevention (n=2265) and four treatment (n=1194) (1966–99). Problems with methodological quality and quality of reporting were found with the trials. Prevention: heterogeneity was found between trials ($\chi^2=6.5$, $p=0.01$) for the occurrence of influenza. There was no evidence that homoeopathic treatment can prevent influenza-like syndrome (RR 0.64, 95% CI 0.28 to 1.43). Treatment: oscillococcinum reduced length of influenza illness by 0.26 days (95% CI 0.47 to 0.05) and increased the chance of a patient considering treatment effective (RR 1.08, 95% CI 1.17 to 1.00).	Authors' conclusions: oscillococcinum probably reduces the duration of illness in patients presenting with influenza symptoms. Though promising, the data are not strong enough to make a general recommendation to use oscillococcinum for first line treatment of influenza. Current evidence does not support a preventive effect of homoeopathy in influenza. Reviewer's notes: Cochrane review	1=good 2=fair 3=good 4=fair 5=fair

*Assessment of methodological quality: 1=selection criteria, 2=search strategy, 3=validity assessment of primary studies, 4=presentation of details of primary studies, 5=data synthesis.
RCT=randomised controlled trial; OR=odds ratio; RR=relative risk; OA=osteoarthritis; NSAID=non-steroidal anti-inflammatory drug.

The second review focused more specifically on osteoarthritis and included four RCTs.²⁹ Fixed rather than individualised treatments were used in all trials. Results between trials were inconsistent and the authors noted methodological problems in all cases. This meant that firm conclusions could not be drawn. The methodological quality of the review was fair to good.

One additional RCT was identified.³⁶ Patients with gonarthrosis (joint disease) received either Zeel compound tablets (a preparation containing several homoeopathic remedies) or diclofenac (a non-steroidal anti-inflammatory drug). No statistically significant between group differences were observed in pain, stiffness, functional ability, and global symptoms.

Headaches/migraine

A systematic review of fair methodological quality focused on the effectiveness of homoeopathy as a prophylactic agent for headaches and migraine.²¹ The results suggested that homoeopathy was not effective. Four trials of classical homoeopathy versus placebo were included. One trial of poor methodological quality found a statistically significant improvement in all outcomes in favour of homoeopathy, whereas the trials of better quality all reported no statistically significant differences between groups.²¹

No new RCTs were identified. However, follow up data were identified for one trial rated in the review as having good methodological quality.³⁷ At 1 year, between group differences for headache frequency, duration, and intensity were still not statistically significant.²²

Asthma

A well conducted review assessed the effectiveness of homoeopathy in treating stable chronic asthma or asthma-like symptoms.²⁶ The three included RCTs were of variable methodological quality. Two showed results in favour of homoeopathy (symptom improvement, lung function improvement, and reduced use of corticosteroids) and one found no statistically significant differences between groups.

Two additional RCTs recruited patients with chronic asthma treated with corticosteroids for at least 5 years before study entry and assessed changes in respiratory function and corticosteroid use.^{38, 39} Neither study detected statistically significant between group differences for change in respiratory function. However, one study showed results in favour of homoeopathy for a reduction in the daily dose of corticosteroids and number of infections.³⁹ The results from both studies should be interpreted with caution due to lack of details on patient and intervention characteristics, and methodological problems such as failure to analyse by intention to treat.

Influenza

A good quality systematic review assessed the use of homoeopathic oscillococcinum in preventing and treating influenza.²⁵ Three prevention and four treatment RCTs were included. Findings indicated that oscillococcinum may reduce the duration of influenza by 0.26 days (95% CI 0.47 to 0.05) but there was insufficient evidence to suggest a preventive effect. One trial reported a higher rate of adverse events in the homoeopathy group (most frequent symptoms were aching muscles and fever). Problems with methodological quality and reporting were noted in all the trials. No further RCTs concerning the use of homoeopathic oscillococcinum or any other homoeopathic preparation in the prevention or treatment of influenza were identified.

Induction of labour

One systematic review assessing the role of homoeopathy in the induction of labour was identified.³⁰ Only one RCT (n=40) was identified which found no statistically significant differences between homoeopathic caulophyllum and placebo. However, this trial may have been too small to detect the true treatment effect. This trial has not been shown in table 2 as only one trial was involved. No further RCTs were identified.

IMPLICATIONS

The evidence base for homoeopathy needs to be interpreted with caution. Many of the areas researched are not representative of the conditions that homoeopathic practitioners usually treat. In addition, all conclusions about effectiveness should be considered together with the methodological inadequacies of the primary studies and some of the systematic reviews.

Common problems with the methodological quality of the primary studies included underpowered studies, failure to analyse by intention to treat, and failure to use allocation concealment (process used to prevent investigators having prior knowledge of group assignment in an RCT). The main problem with some of the systematic reviews was the pooling of clinically heterogeneous data.

There are currently insufficient data to either recommend homoeopathy as a treatment for any specific condition or to warrant significant changes in the provision of homoeopathy. The authors of many of the systematic reviews recommended further primary research to clarify or confirm conclusions relating to the effectiveness of homoeopathy. Any future research evaluating homoeopathy should address the methodological inadequacies of the existing evidence base.

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REFERENCES

- 1 **NHS Centre for Reviews and Dissemination.** Homeopathy. *Effective Health Care* 2002;**7**(3).
- 2 **Owen D,** Lewith G, Stephens C, *et al.* Can doctors respond to increasing interest by patients in complementary and alternative medicine? *BMJ* 2001;**322**:154–8.
- 3 **Thomas K,** Nicholl J, Coleman P. Use and expenditure on complementary medicine in England: a population based survey. *Complement Ther Med* 2001;**9**:2–11.
- 4 **British Homeopathic Association.** The case for homeopathy: homeopathy in the NHS. http://www.trusthomeopathy.org/case/cas_nhs.html (accessed 3 April 2001).
- 5 **Vickers A,** Zollman C. ABC of complementary medicine: homeopathy. *BMJ* 1999;**319**:1115–8.
- 6 **de Lange E.** Effects of homeopathic medicines on children with recurrent upper respiratory tract infections. Amsterdam: University of Amsterdam, 2000.
- 7 **Kleijnen J,** Knipschild P, Ter Riet G. Clinical trials of homeopathy. *BMJ* 1991;**302**:316–23.
- 8 **Vandenbroucke J.** Homeopathy trials: going nowhere. *Lancet* 1997;**350**:824.
- 9 **Kleijnen J.** What research is needed to show the effectiveness of homeopathy? *Br Homeopath J* 2000;**89**:S1–2.
- 10 **Royal London Homeopathic Hospital.** The evidence base of complementary medicine. 2nd ed. London: Royal London Homeopathic Hospital, 1999.
- 11 **Vickers AJ.** Clinical trials of homeopathy and placebo: analysis of a scientific debate. *J Altern Complement Med* 2000;**6**:49–56.
- 12 **Hill C,** Doyon F. Review of randomized trials of homeopathy. *Rev Epidemiol Sante Publ* 1990;**38**:139–47.
- 13 **Linde K,** Clausius N, Ramirez G, *et al.* Are the clinical effects of homeopathy placebo effects? A meta-analysis of placebo-controlled trials. *Lancet* 1997;**350**:834–43.
- 14 **Cucherat M,** Haugh MC, Gooch M, *et al.* Evidence of clinical efficacy of homeopathy. A meta-analysis of clinical trials. *Eur J Clin Pharmacol* 2000;**56**:27–33.
- 15 **Linde K,** Melchart D. Randomized controlled trials of individualized homeopathy: a state-of-the-art review. *J Altern Complement Med* 1998;**4**:371–88.
- 16 **Ernst E.** Classical homeopathy versus conventional treatments: a systematic review. *Perfusion* 1999;**12**:13–5.
- 17 **Chapman EH,** Weintraub RJ, Milburn MAT, *et al.* Homeopathic treatment of mild traumatic brain injury: a randomized, double-blind, placebo-controlled clinical trial. *J Head Trauma Rehabil* 1999;**14**:521–42.
- 18 **Yakir M,** Kreidler S, Brzezinski A, *et al.* Effects of homeopathic treatment in women with premenstrual syndrome: a pilot study. *Br Homeopath J* 2001;**90**:148–53.
- 19 **Jacobs J,** Jimenez LM, Malthouse S, *et al.* Homeopathic treatment of acute childhood diarrhea: results from a clinical trial in Nepal. *J Altern Complement Med* 2000;**6**:131–9.
- 20 **Jacobs J,** Springer D, Crothers D. Homeopathic treatment of acute otitis media in children: a preliminary randomized placebo-controlled trial. *Pediatr Infect Dis J* 2001;**20**:177–83.
- 21 **Ernst E.** Homeopathic prophylaxis of headaches and migraine? A systematic review. *J Pain Symptom Manage* 1999;**18**:353–7.
- 22 **Walach H,** Lowes, Mussbach. The long-term effects of homeopathic treatment of chronic headaches: 1 year follow up. *Cephalalgia* 2000;**20**:835–7.
- 23 **Barnes J,** Resch KL, Ernst E. Homeopathy for postoperative ileus?: a meta-analysis. *J Clin Gastroenterol* 1997;**25**:628–33.
- 24 **Ernst E,** Pittler MH. Efficacy of homeopathic Arnica: a systematic review of placebo-controlled clinical trials. *Arch Surg* 1998;**133**:1187–90.
- 25 **Vickers A,** Smith C. Homeopathic oscillocoquinum for preventing and treating influenza and influenza-like syndromes (Cochrane Review). In: *The Cochrane Library*. Issue 4. Oxford: Update Software, 2001.
- 26 **Linde K,** Jobst K. Homeopathy for chronic asthma (Cochrane Review). In: *The Cochrane Library*. Issue 4. Oxford: Update Software, 2001.
- 27 **Ernst E,** Barnes J. Are homeopathic remedies effective for delayed-onset muscle soreness? A systematic review of placebo-controlled trials. *Perfusion* 1998;**11**:4–8.
- 28 **Jonas WB,** Linde K, Ramirez G. Homeopathy and rheumatic disease. *Rheum Dis Clin North Am* 2000;**26**:117–23.
- 29 **Long L,** Ernst E. Homeopathic remedies for the treatment of osteoarthritis: a systematic review. *Br Homeopath J* 2001;**90**:37–43.
- 30 **Smith C.** Homeopathy for induction of labour (Cochrane Review). In: *The Cochrane Library*. Issue 4. Oxford: Update Software, 2001.
- 31 **Tuten C,** McClung J. Reducing muscle soreness with Arnica montana. Is it effective? *Altern Complement Ther* 1999;**5**:369–72.
- 32 **Vickers AJ,** Fisher P, Smith C, *et al.* Homeopathic Arnica 30x is ineffective for muscle soreness after long-distance running: a randomized, double-blind, placebo-controlled trial. *Clin J Pain* 1998;**14**:227–31.
- 33 **Tveiten D,** Bruset S, Borchgrevink C, *et al.* Effects of the homeopathic remedy Arnica D30 on marathon runners: a randomized, double blind study during the 1995 Oslo marathon. *Complement Ther Med* 1998;**6**:71–4.
- 34 **Hart O,** Mullee MA, Lewith G, *et al.* Double-blind, placebo-controlled, randomized clinical trial of homeopathic arnica C30 for pain and infection after total abdominal hysterectomy. *J R Soc Med* 1997;**90**:73–8.
- 35 **Ramelet AA,** Buchheim G, Lorenz P, *et al.* Homeopathic Arnica in postoperative haematomas: a double-blind study. *Dermatology* 2000;**201**:347–8.
- 36 **Strosser W,** Weiser M. Patients with gonarthrosis gaining back mobility: homeopathic in a doubleblind comparison. *Biol Med* 2000;**29**:295–9.
- 37 **Walach H,** Haesler W, Lower T, *et al.* Classical homeopathic treatment of chronic headaches. *Cephalalgia* 1997;**17**:119–26.
- 38 **Matusiewicz R.** The homeopathic treatment of corticosteroid-dependent asthma: a double-blind, placebo-controlled study. *Biomed Ther* 1997;**4**:117–22.
- 39 **Matusiewicz R,** Wasniewski J, Sterna Bazanska A, *et al.* Behandlung des chronischen Asthma bronchiale mit einem homöopathischen Komplexmittel. *Erfahrungsheilkunde* 1999;**48**:367–74.
- 40 **Kleijnen J,** Knipschild P. The comprehensiveness of Medline and Embase computer searches. Searches for controlled trials of homeopathy, ascorbic acid for common cold and ginkgo biloba for cerebral insufficiency and intermittent claudication. *Pharm Weekbl Cereb* 1992;**14**:316–20.
- 41 **Linde K,** Scholz M, Ramirez G, *et al.* Impact of study quality on outcome in placebo-controlled trials of homeopathy. *J Clin Epidemiol* 1999;**52**:631–6.